

## **Cost-Effectiveness Of PET/CT In Pre-Operative Staging Of Pancreatic Cancer**

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### **Value in Health**

DOI:

[10.1016/j.jval.2017.08.1078](https://doi.org/10.1016/j.jval.2017.08.1078)

Published: 01/10/2017

Peer reviewed version

[Cyswllt i'r cyhoeddiad / Link to publication](#)

*Dyfyniad o'r fersiwn a gyhoeddwyd / Citation for published version (APA):*

Plumpton, C., Ghaneh, P., Lloyd-Williams, H., Yeo, S. T., & Edwards, R. (2017). Cost-Effectiveness Of PET/CT In Pre-Operative Staging Of Pancreatic Cancer: An Economic Evaluation Of The PET-PANC Cohort Study. *Value in Health*, 20(9), A589. <https://doi.org/10.1016/j.jval.2017.08.1078>

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**RESEARCH TOPIC:** Cost studies.

**RESEARCH SUB-TOPIC:** Cost-effectiveness analysis.

**DISEASE AREA:** Cancer.

**HEALTH CARE TREATMENT:** Medical device/diagnostics

**TITLE:** COST-EFFECTIVENESS OF PET/CT IN PRE-OPERATIVE STAGING OF PANCREATIC CANCER: AN ECONOMIC EVALUATION OF THE PET-PANC COHORT STUDY

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**FINANCIAL SUPPORT:** NIHR HTA programme: 08/29/02

**OBJECTIVES:** Diagnosis of pancreatic cancer is challenging as patients may be relatively asymptomatic during its early course. PET/CT may improve diagnosis and staging of pancreatic cancer but is not widely used across the UK. There is uncertainty whether PET/CT represents good value for money. This study aimed to model the cost-effectiveness of PET/CT compared with multidetector computed tomography (MDCT) alone in the diagnosis and management of patients with pancreatic cancer, based on data collected from the multi-centre PET-PANC cohort study.

**METHODS:** A decision-analytic model was developed to compare patient pathways following diagnosis with PET/CT compared with MDCT alone. Patient management strategies following PET/CT were taken from PET-PANC. Patient management strategies following MDCT alone were based on clinical interpretation of the initial MDCT diagnosis. Event-based regressions were used associate strategies with cost and QALY data collected during PET-PANC. Analysis was conducted from the perspective of the UK National Health Service (NHS), over a 12-month time-horizon. Uncertainty was considered in univariate and multivariate sensitivity analyses. Subgroup analysis considered the impact of PET/CT on patients with diagnosis of chronic pancreatitis; malignancy; and those who were scheduled for resection surgery.

**RESULTS:** The mean total cost and QALYs of pancreatic cancer service use over 12-months were £13,193 per patient (95% confidence interval (CI): £11,634, £14,802), and 0.5540 (95% CI: 0.5261, 0.5811), respectively. PET/CT dominated MDCT, being both less costly and more effective. The

largest cost saving and highest QALY gain were seen for the subgroup scheduled for resection surgery. The probability of cost-effectiveness at a threshold of £20,000/QALY was 82%.

**CONCLUSIONS:** It is likely that use of PET/CT in the diagnosis and staging of pancreatic cancer is cost-effective for the UK NHS, with the most cost-effective use of PET/CT being in patients who are suspected of having pancreatic cancer and are scheduled for resection surgery following MDCT.